

memory controller that, as is conventional, utilizes modular memory. Specifically, Johnson's memory is described as contained in Single In-Line Memory Modules (SIMM's). The Examiner's comment is that Johnson's SIMM's can be added and removed, and the memory controller must account for a change in total memory if a SIMM is added or removed.

Applicant notes, first, that SIMM's can be added or removed from Johnson's system only by powering down, adding or removing SIMM's, powering up, and then reconfiguring. This is, indeed, typical of all computer systems having reconfigurable memory. Indeed, Johnson states at col. 8, lines 32-45 that "flash memory (not shown) is used to store detailed information concerning the memory components utilized by the system. .... Such information, for example, may include the number of SIMMs present, the memory capacity of each SIMM [etc.] ... This data is usually written by a user to flash memory when initializing the computing system that hosts the memory. The flash memory typically comprises a write-once-read-many ("WORM") memory component such as an electrically programmable read only memory ("EPROM").

When a computer is powered down to change its configuration, all information stored in the cache must first be purged (and written back, if needed) and the cache essentially

deactivated; otherwise, there would be data loss. Thus, it is not the case that the cache system "respond[s] to a change in memory"; rather, the cache system is completely deactivated, and then the computer is deactivated, before any memory change occurs. If the user were to pull out a SIMM while the computer were still running, an error would be a certain result.

Applicant's claims are directed to a far more fluid ability to adjust to changes in memory configuration. Specifically, Applicant's claims recite the real-time event of "responding to a change in total available memory capacity" as part of the operation of a cache system. As stated in the present application, page 7, lines 29 et seq., "this cache management approach includes features permitting dynamic reconfiguration of the cache size, so that cache memory may be added and removed in real time without requiring computer system downtime. This feature avoids the opportunity cost that was previously inherent in upgrading or changing the cache hardware of a computer system." The specifics of this operation according to the disclosed embodiment of the invention, are disclosed in Figs. 7-8 and discussed beginning at page 48.

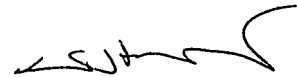
The Examiner's Office Action does not appear to have considered the fact that neither the McNutt nor the Johnson patents disclose a system that can respond to a change in total

memory, but rather require (as is typical) that power be removed to effect a physical memory change. Applicant submits that this aspect of the present claims is patentably distinct over these references, and therefore all claims are allowable.

Should the Examiner find that the application is not yet in allowable condition, Applicant would request the Examiner contact the undersigned to discuss this application and resolve all outstanding issues.

This response is believed to be timely. If, however, any petition for extension of time is necessary to accompany this communication, please consider this paper a petition for such an extension of time, and apply the appropriate extension of time fee to Deposit Account 23-3000. If any other charges or credits are necessary to complete this communication, please apply them to Deposit Account 23-3000.

Respectfully submitted,



Thomas W. Humphrey  
Reg. No. 34,353

Wood, Herron & Evans, L.L.P.  
2700 Carew Tower  
441 Vine Street  
Cincinnati, OH 45202-2917  
Voice: (513) 241-2324  
Facsimile: (513) 421-7269